

Women in Science DIY Kit

Women in Science is a card game that familiarizes players with remarkable, often unknown, women of science and offers inspiring role models for kids. You can print the game by yourself using this file or order a copy from our website: www.LuanaGames.com

This project was made possible by hundreds of backers who supported our crowdfunding campaign. Thank you so much!

Update 2.0: Added the Women in Space Expansion (16 cards)

We would like to thank our sponsors:



Nova: science for curious minds

Nova.org.au



WomenInBio.org

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Instructions: Print pages 2 to 9, then put the sheets back in the printer (other side, same direction) and print page 10 on the back of the cards (you might want to test it once to be sure it fits). You can then cut the cards following the dashed lines. The best way is to use a paper trimmer, and cut about 2mm from the dashed line towards the inside of the card. We recommend using glossy white paper between 150g/m² and 300g/m².



MADE IMPORTANT DISCOVERIES RELATED TO RADIOACTIVITY. SHE PARTICIPATED IN THE MANHATTAN PROJECT, CREATED THE WU EXPERIMENT, AND IMPROVED GEIGER COUNTERS.



DIENG-KUNTZ SPECIALIZED IN ARTIFICIAL INTELLIGENCE. SHE WORKED ON KNOWLEDGE MANAGEMENT AND THE SEMANTIC WEB.



FIRST WOMAN FROM NORTH AFRICA TO BECOME A DOCTOR AND A CYNECOLOGIST, SHE WAS A PIONEER IN THE FIELD OF FAMILY PLANNING.



ANATOMY, WANGARI MUTA MAATHAI WON THE NOBEL PEACE PRIZE IN RECOGNITION OF HER CONTRIBUTION TO SUSTAINABLE DEVELOPMENT.



FRANÇOISE DOLTO IS RECOGNIZED FOR HER RESEARCH INTO THE PSYCHOLOGY OF THE BABY AND THE CHILD, AND OF THEIR BODY LANGUAGE.



DEVELOPED THE FIRST COMPILER AND THE COBOL PROGRAMMING LANGUAGE. SHE POPULARIZED THE STORY OF THE FIRST "REAL" COMPUTER BUG.



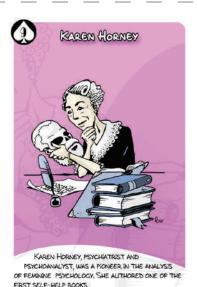




CHILD. SHE DEVELOPED NEW TREATMENT TECHNIQUES AND GREATLY INFLUENCED PSYCHOANALYSIS.



PSYCHOLOGIST ALICE MILLER WAS VERY INFLUENTIAL IN STUDYING VIOLENCE IN EDUCATION, SHE DENOUNCED CHILD-RAISING METHODS THAT HARM CHILDREN OR DO NOT MEET THEIR NEEDS.







STARS AND NOVAE, AND DISCOVERED THAT THE STARS ARE COMPOSED OF 99% HYDROGEN AND HELIUM.













THE MOTHER OF 12 CHILDREN. SHE WAS A PIONEER IN ERGONOMICS AND IN WORK PSYCHOLOGY.



MATHEMATICIAN SOFIA

KOVALEVSKAYA CONTRIBUTED TO ANALYSIS,
DIFFERENTIAL EQUATIONS AND THE PHYSICS OF
ROTATING BODIES. THE KOVALEVSKAYA TOP IS USED
TO MODEL SATURN'S RINGS.



ELLEN HAYES WAS A MATHEMATICIAN,
AN ASTRONOMER AND A TEACHER SHE
CALCULATED THE ORBIT OF ASTEROIDS AND
CELESTIAL BODIES. SHE WAS ALSO A SUFFRACIST
AND A LABOR RIGHTS ACTIVIST.



WROTE AND TRANSLATED BOOKS IN MANY
FIELDS OF SCIENCE. SHE PREDICTED THAT ANOTHER
PLANET WAS PERTURBING LIRANUS BEFORE NEPTUNE
WAS DISCOVERED.



EMMY NOETHER WAS A VERY INFLUENTIAL MATHEMATICIAN. SHE IS KNOWN FOR HER SIGNIFICANT CONTRIBUTIONS TO ABSTRACT ALCEBRA AND THEORETICAL PHYSICS.



ENTOMOLOGIST MARCARET
FOUNTAINE TRAVELLED ACROSS 60 COUNTRIES
TO COLLECT, OBSERVE AND SKETCH INSECTS. SHE WAS
AN EXPERT IN TROPICAL BUTTERFLY LIFE-CYCLES.



AN INDUSTRIAL CHEMIST AND A PIONEER IN SANITARY ENGINEERING AND DOMESTIC SCIENCE. SHE WAS ONE OF THE FIRST PEOPLE TO APPLY CHEMISTRY TO THE STUDY OF NUTRITION.



PHYSICIST LEONA WOODS HELPED
BUILD THE FIRST NUCLEAR REACTOR AND
THE FIRST ATOMIC BOMR HER WORK ON THEE RANS
OPENED THE DOOR TO THE STUDY OF CLIMATE CHANCE.



BIOLOGIST RACHEL CARSON
STUDIED THE HARMFUL EFFECTS OF
PESTICIDES ON BIRDS AND THE ENVIRONMENT.
HER BOOK "SILENT SPRING" HELPED TO LAUNCH
THE ENVIRONMENTAL MOVEMENT.



PHYSICIST TIKVAH ALPER WORKED ON ALPHA PARTICLES WITH LISE MEITHER. LATER SHE BECAME A RADIOBIOLOGIST AND DISCOVERED THAT PRION DISEASES ARE NOT TRANSMITTED BY A VIRUS.



BEST KNOWN FOR HER SYMBIOCENESIS THEORY, WHICH DESCRIBES HOW ELKARYOTIC CELLS CAME TO CONTAIN SOME ORGANELLES BY ENVELOPING OTHER EARLY CELL TYPES.



THEO COLBORN WAS A ZOOLOGIST AND ENVIRONMENTAL HEALTH ANALYST, SHE STUDIED HOW HUMAN-PRODUCED CHEMICALS CAN CONCENTRATE IN THE FOOD CHAIN AND AFFECT DEVELOPMENT IN PEOPLE AND OTHER ANIMALS.

THEO COLBORN



THE MOST FAMOUS WOMAN INVENTOR OF THE 19TH CENTURY, SHE DESIGNED A MACHINE TO FOLD AND CLUE PAPER BAGS, AND NUMEROUS OTHER DEVICES.



DEVELOPED ROCKET, SATELLITE AND JET PROPULSION TECHNOLOGIES. THE HYDRAZINE RESISTOJET SHE INVENTED CREATLY IMPROVED SATELLITE PROPULSION METHODS.









OF EARTH'S MAGNETIC FIELD AND SOLAR BURSTS.

SHE CALCULATED THE TRAJECTORY FOR THE APOLLO 11 FLIGHT TO THE MOON.



BIOCHEMIST DOROTHY

CROWFOOT HODCKIN WON THE NOBEL PRIZE
IN CHEMISTRY FOR THE DEVELOPMENT OF PROTEIN
X-RAY CRYSTALLOCRAPHY.



ALTHOUGH SHE NEVER RECEIVED FORMAL TRAINING, MATHEMATICIAN SOPHIE GERMAIN MADE SIGNIFICANT CONTRIBUTIONS TO NUMBER THEORY AND ELASTICITY. SHE ALSO STUDIED PHILOSOPHY AND PSYCHOLOGY.



GENETICIST NETTIE STEVENS
WAS ONE OF THE FIRST SCIENTISTS TO
DESCRIBE X AND Y CHROMOSOMES AND THEIR
ROLE IN SEX DETERMINATION.



MATHEMATICIAN ADA LOVELACE

WAS THE FIRST EVER COMPUTER PROCRAMMER

SHE UND'TE THE FIRST ALGORITHM FOR CHARLES
BABBACE'S ANALYTICAL ENGINE.



INCE LEHMANN WAS A SEISMOLOGIST. SHE DISCOVERED THAT THE MOLTEN INSIDE OF THE EARTH HAS A SOLID INNER CORE.



GEOLOGIST AND OCEANOGRAPHIC
CARTOGRAPHER MARIE THARP CREATED
THE FIRST MAP OF THE ENTIRE OCEAN FLOOR,
AND REVEALED THE PRESENCE OF UNDERWATER
MOUNTAINS - THE MID-OCEAN RIDGES.



PHYSICIST TRÊNE JOLIOT-CURIE, THE DAUGHTER OF MARIE CURIE, WON THE NOBEL PRIZE IN CHEMISTRY FOR HER WORK CREATING ARTIFICIALLY RADIOACTIVE ELEMENTS.



HOLLYWOOD ACTRESS HEDY LAMARR
CO-INVENTED AN IMPORTANT MILITARY
COMMUNICATIONS TECHNOLOGY, WHICH IS NOW
USED IN WIFI AND BLUETOOTH.



THIS CARD ALLOWS YOU TO CHOOSE A CHARACTER FROM THE DISCARD PILE AND ADD IT TO YOUR HAND.





AND ADD THEM TO YOUR HAND. YOUR OPPONENT'S LAB IS DESTROYED AND ITS REMAINING CARDS RETURN TO HIS HAND,



SCIENTISTS FROM AN OPPONENT'S LAB AND ADD THEM TO YOUR HAND. YOUR OPPONENT'S LAB IS DESTROYED AND ITS REMAINING CARDS RETURN TO HIS HAND,











RETURN TO HIS HAND,

HOW TO PLAY

The goal is to collect 4 cards of the same color to form a " lab ". The first player who forms 3 labs wins.

G CARDS ARE PLACED FACE-UP IN FRONT OF EACH PLAYER, THE DECK IS PUT FACE-DOWN AT THE CENTER OF THE TABLE AND THE FRST CARD IS REMOVED AND PLACED FACE-UP TO START THE DISCARD PILE.

AT THE BEGINNING OF A TURN, THE PLAYER CHOOSES EITHER TO TAKE A CARD FROM THE BECK OR TO TAKE THE FIRST CARD OF THE DISCARD PLE, AT THE END OF THE TURN, THE CURRENT FLAYER CAN ONLY KEEP & CARDS IN THEIR HAND, THE REST MUST BE DISCARDED.

Some cards have more than one color, and can contribute to a LAB of either color.

THE ENROLLMENT CARD PERMITS A PLAYER TO TAKE ANY SCIENTIST FROM THE DISCARD PILE, THE ENROLLMENT CARD IS THEN PUT UNDER THE DISCARD PILE AND CAN'T BE PICKED UP AFTERWARDS.

THE PRESTIGE CARD PERMITS A PLAYER TO STEAL 2 SCIENTISTS PROM AN OPPONENT'S LAB (THE OPPONENT'S LAB IS DESTROYED AND THE REMANS RETURN TO THE OPPONENT'S HAND). THE PRESTIGE CARD IS THEN PUT UNDER THE DISCARD PILE AND CAN'T BE PICKED UP

THE CLONE CARD ALLOWS A PLAYER TO MAKE AN EXACT COPY OF A SCIENTIST THAT IS ALREADY IN THE PLAYER'S HAVID. THE CLONE CARD IS PLACED ALONGSIDE THE COPYED SCIENTIST WHEN FORWING THE LAB YOU CAN USE UP TO TWO CLONES IN THE SAME LAB, IS THE LAB DESTROYED, THE CLONE CARD CAN BE USED ACAIN WITH ANY

IP THERE ARE NO MORE CARDS IN THE DECK AT THE START OF A PLAYER'S TURN, THAT HAVES LOSES THE CARDS IN THEIR HAND AND IS ELIMINATED FROM THE CAME. THE HAVES CARDS AND LASS ARE SHUFFLED WITH THE BUSCARD FUE TO FORM A NEW DECK THE FIRST CARD OF THE BECK BECOMES THE MEM DISCARD FUE.

EART & ETABH

CARD COLORS ARE ASSOCIATED WITH SCIENTIFIC FIELDS:

BIOLOGY / MEDICINE
ASTRONOMY & ENCIMERRING
ECOLOGY / GEOLOGY
MATHEMATICS & COMPUTER SCIENCE
PSYCHOLOGY / ANTHROPOLOGY
WOMEN IN SPACE (EXPANSION PACK)

WHEN CHOOSING WHICH CARDS TO KEEP IN YOUR HAND, REMEMBER THAT SOME COLORS ARE MORE COMMON THAN OTHERS. FOR INSTRUCES, ORANGE AND YELLOW CARDS ARE YERY COMMON, AND PRINC CARDS ARE THE RAREST, KEEP AN EYE ON YOUR OPPONENTS CARDS TOO.

WHEN FORMING A NEW LAB OR STEALING FROM YOUR OPPONENTS, REMEMBER THAT CLOME CARDS ARE THE MOST VALUABLE, FOLLOWED BY TWO-COLOR CARDS, AND THEN SNICE-FOR CARDS, KEEP IN MIND THAT YOUR OPPONENTS WELL BE MORE TRAFTED TO STEAL YOUR CASS IF THERE ARE MORE VILLMBLE CARDS IN THEM, ESPECIALLY IF THERE ARE FEW LABS IN PLAY.

THE BEST WAY TO PREVENT A LAB FROM BEING DESTROYED IS TO KEEP IT IN YOUR HAND AS LONG AS IT DOESN'T FORCE YOU TO DISCARD A VALUABLE CARD,

It can be tempting to use a **Prestice** card as soon as a lab comes in play, but, unless using it prevents you from discarding a valuable card, it is often more rewarding to

Customize the game by adding or removing special cards and adding house rules.

VISIT WWW.LUANAGAMES.COM TO READ MORE ABOUT WOMEN IN SCIENCE,



AEROSPACE ENGINEER KALPANA CHAWLA WAS A MISSION SPECIALIST AND PRIMARY ROBOTIC ARM OPERATOR ON SPACE SHUTTLE COLUMBIA.





RECAME THE FIRST AFRICAN AMERICAN WOMAN TO TRAVEL IN SPACE. SHE IS ALSO THE FIRST REAL ASTRONAUT TO APPEAR ON STAR TREK



STEPHANIE WILSON SPENT A TOTAL OF 43 DAYS IN SPACE DURING 3 SEPARATE MISSIONS. SHE SERVED AS A ROBOTIC ARM OPERATOR AND FLIGHT ENGINEER.



KALPANA CHAWLA

CARDIOVASCULAR SURGEON CHIAKI MUKAI RECAME THE FIRST JAPANESE WOMAN IN SPACE, AND THE FIRST JAPANESE CITIZEN TO COMPLETE TWO SPACEFLIGHTS.



VALENTINA TERESHKOVA BECAME THE FIRST WOMAN TO HAVE FLOWN IN SPACE ON JUNE 16, 1963. SHE TOOK PHOTOGRAPHS WHICH WERE USED TO IDENTIFY AEROSOL LAYERS IN THE ATMOSPHERE.



HELPED DEVELOP THE CANADARM ROBOTIC ARM. SHE COMPLETED TWO SPACEFLIGHTS FOR A TOTAL OF 14 DAYS IN SPACE.



ENGINEER AND ASTRONAUT JULIE PAYETTE HAS COMPLETED TWO SPACEFLIGHTS AND SPENT 25 DAYS IN THE INTERNATIONAL SPACE STATION WHERE SHE OPERATED THE CANADARM ROBOTIC ARM.







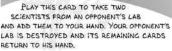
THIS CARD, DRAW TWO CARDS FROM THE DECK.













AND ADD THEM TO YOUR HAND, YOUR OPPONENT'S LAB IS DESTROYED AND ITS REMAINING CARDS RETURN TO HIS HAND,

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